

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application

1. (Currently Amended) An interacting method for a Wireless Local Area Network (WLAN) user equipment (UE) fast selecting a mobile communication network to access in a WLAN interworking network, ~~wherein~~ comprising the steps of:

initiating an authentication procedure after the connection between a WLAN UE and a WLAN Access Network (AN) is established;

sending a User Identity Request message to said WLAN UE;

on receiving said User Identity Request message, deciding network selection information to be carried based on the ~~information of the WLAN covering the WLAN UE and/or the~~ WLAN information stored in the WLAN UE, and returning a message carrying said network selection information to said WLAN AN;

deciding whether said network selection information in the received message indicates a mobile communication network to which the WLAN AN is able to route an authentication request message, if yes, forwarding the authentication request message of said WLAN UE ~~will be forwarded~~ to the mobile communication network indicated in the network selection information, and otherwise, sending a notification signal to said WLAN UE, and directing said WLAN UE to perform subsequent operations.

2. (Currently Amended) The method according to Claim 1, further comprising the step[[s]] of:

pre-configuring a mobile communication network with the highest priority to be accessed by said WLAN UE.

3. (Currently Amended) The method according to Claim 2, wherein, said WLAN information refers to WLAN identity information; and

said step of deciding network selection information comprises:

obtaining the identity information of the current WLAN,

matching the obtained WLAN identity information and the WLAN identity information stored in said WLAN UE, and

if the identity information of the current WLAN and the corresponding network selection information is stored in said WLAN UE, regarding the network selection information corresponding to the identity information of current WLAN as the network selection information to be carried; otherwise, said pre-configured mobile communication network with the highest priority will be carried as the network selection information .

4. (Currently Amended) The method according to Claim 3, wherein, further comprising the steps of:

judging whether the identity information of the current WLAN is stored in said WLAN UE when the WLAN UE has successfully accessed the mobile communication network indicated in the network selection information, and

if not so stored, storing the identity information of the WLAN, and storing the information of the mobile communication network being successfully accessed as the network selecting information corresponding to the identity information of the WLAN; otherwise, no inhibiting storing is ~~performed~~.

5. (Previously Presented) The method according to Claim 2, wherein, said pre-configured mobile communication network with the highest priority is the home network.

6. (Previously Presented) The method according to Claim 3, wherein, said WLAN identity information refers to Access Point Identity (APID) or Service Set Identity (SSID); said Access Point Identity (APID) is Media Access Control (MAC) address of the Access Point (AP).

7. (Canceled)

8. (Currently Amended) The method according to Claim 4, further comprising the steps of:

after storing the WLAN identity information and its corresponding network selection information, setting a valid survival time for the stored network selection information so as to make the stored contents invalid when ~~overtime~~, the survival time is exceeded ~~after storing the WLAN identity information and its corresponding network selection information~~.

9. (Currently Amended) The method according to Claim 8, further comprising the steps of:

when the identity information of the current WLAN matches the stored WLAN identity information, judging whether the stored network selection information corresponding to the identity information of the WLAN exceeds the valid survival time, ~~when the identity information of the current WLAN matches the stored WLAN identity information~~,

if the survival time is exceeded yes, regarding the pre-configured mobile communication network with the highest priority as the network selection information to be carried; and otherwise, regarding the network selection information as the network selection information to be carried, and the valid survival time being consumed continuously.

10. (Currently Amended) The method according to Claim 8, further comprising the steps of:

when the WLAN UE has successfully accessed the mobile communication network indicated in the network selection information, judging whether the WLAN UE has stored the information of the mobile communication network which is currently accessed with success; ~~when the WLAN UE has successfully accessed the mobile communication network indicated in the network selection information~~;

if there is no such information stored, storing the identity information of the WLAN, together with said information as the network selection information corresponding to the identity information of the current WLAN, and resetting the valid survival time of the currently stored network selection information; and otherwise, judging whether said WLAN UE has adopted to access the network selection information corresponding to the identity information of the WLAN stored by said WLAN UE ~~to access~~, and

if the information has been adopted yes, consuming the valid survival time of the network selection information continuously; and otherwise, resetting said valid survival time of the network selection information.

11. (Original) The method according to Claim 4, further comprising the steps of:
setting a valid usage times for the stored network selection information, after storing the WLAN identity information and its corresponding network selection information.

12. (Original) The method according to Claim 11, further comprising the steps of:

if the identity information of the current WLAN is stored in said WLAN UE, judging whether the valid usage times of the stored network selection information corresponding to the identity information of current WLAN have been consumed, if yes, regarding the pre-configured mobile communication network with highest priority as the network selection information to be carried; otherwise, regarding the network selection information as the network selection information to be carried, and the valid usage time being consumed continuously.

13. (Currently Amended) The method according to Claim 11, further comprising the steps of:

when the WLAN UE has successfully accessed the mobile communication network indicated in the network selection information, judging whether the WLAN UE has stored the mobile communication network of the current successful access, ~~when the WLAN UE has successfully accessed the mobile communication network indicated in the network selection information~~;

if there is no such information stored, storing the mobile communication network of the current successful access as the network selection information corresponding to the identity information of the current WLAN together with the identity information of the WLAN, and resetting the valid usage times of the currently stored network selection information; and otherwise, judging whether said WLAN UE has adopted to access the network selection information corresponding to the identity information of current WLAN it stores ~~to access~~, and

if it has been adopted yes, consuming the valid usage times of the network selection information continuously; otherwise, resetting the valid usage times of the network selection information.

14. (Previously Presented) The method according to Claim 8, further comprising the steps of:

deleting the identity information of the WLAN and its corresponding network selection information stored by the WLAN UE, when the valid survival time corresponding to the network selection information is over.

15. (Currently Amended) The method according to Claim 4, further comprising the steps of:

setting a threshold ~~of the number~~ for the amount of the information permitted to be stored in the WLAN UE,

judging whether the identity information of the current WLAN and its corresponding network selection information exceeds said threshold of the amount of information ~~number~~ permitted to be stored,

if the amount is exceeded yes, deleting old or selected information, and storing the identity information of the WLAN and its corresponding network selection information; and otherwise, storing the identity information of the WLAN and its corresponding network selection information.

16. (Original) The method according to Claim 1, wherein said network selection information is contained in the Network Access Identity (NAI).

17. (Original) The method according to Claim 1, wherein said step of sending a notification signal to said WLAN UE comprises:

re-selecting a mobile communication network, and obtaining the network information corresponding to the selected mobile communication network according to the notification signal; and sending a message carrying the selection information of the new network to the WLAN AN.

18. (Original) The method according to Claim 17, further comprising the steps of:
waiting for response messages from said WLAN UE for a certain time, if no response has been received, sending a Selection Result Request to said WLAN UE.

19. (Original) The method according to Claim 19, wherein said step of sending the notification signal comprises:

closing the current authentication process,
re-selecting a mobile communication network, and
re-initiating an authentication procedure to the WLAN AN and sending access authentication information carrying the new network selection information.

20. (Currently Amended) The method according to Claim 1, wherein said step of sending a notification signal to said WLAN UE comprises:

indicating to the WLAN UE that the current selected network is invalid and downloading the mobile communication network information needed,

said WLAN UE determining whether to download the mobile communication network information, if yes, said WLAN UE returning a response of needing to download the network information;

sending the mobile communication network information to said WLAN UE on receiving the response;

after ~~getting~~ receiving the information, re-selecting a mobile communication network on receiving the mobile communication network information, and re-sending an Access Authentication Request carrying said network selection information to the WLAN AN; otherwise, doing nothing or returning response information indicating that no downloading is needed.

21. (Currently Amended) The method according to Claim 20, further comprising the steps of:

waiting for the response from the WLAN UE for a certain time ~~on~~ after sending the notification signal and, if ~~on~~ none is received, sending mobile communication network information to said WLAN UE .

22. (Currently Amended) The method according to Claim 20, further comprising the steps of:

finishing the current process flow on sending the notification signal; and

if the network information needs to be downloaded, initiating a network information downloading flow.

23. (Currently Amended) The method according to Claim 17, ~~wherein~~ further including the step of automatically selecting mobile communication network information sent by the network according to parameters set in advance.

24. (Currently Amended) The method according to Claim 20, ~~wherein~~ further including the step of automatically selecting mobile communication network information sent by the network according to parameters set in advance.

25. (Previously Presented) The method according to Claim 1, wherein, said WLAN interworking network refers to 3GPP-WLAN interworking network.

26. (Previously Presented) The method according to Claim 1, wherein, said mobile communication network refers to a public land mobile network (PLMN).

27. (Previously Presented) The method according to Claim 12, further comprising the steps of:

deleting the identity information of the WLAN and its corresponding network selection information stored by the WLAN UE, when the valid usage times corresponding to the network selection information are consumed.

28. (Currently Amended) The method according to Claim 10, further comprising the steps of:

setting a threshold ~~of the number~~ for the amount of the information permitted to be stored in the WLAN UE,

judging whether the identity information of the current WLAN and its corresponding network selection information exceeds said threshold of the amount of information ~~number~~ permitted to be stored,

if the amount is exceeded ~~yes~~, deleting old or selected information, and storing the identity information of the WLAN and its corresponding network selection information; and otherwise, storing the identity information of the WLAN and its corresponding network selection information.

29. (Currently Amended) The method according to Claim 13, further comprising the steps of:

setting a threshold ~~of the number~~ for the amount of the information permitted to be stored in the WLAN UE,

judging whether the identity information of the current WLAN and its corresponding network selection information exceeds said threshold of the amount of information ~~number~~ permitted to be stored,

if the amount is exceeded ~~yes~~, deleting old or selected information, and storing the identity information of the WLAN and its corresponding network selection information; and otherwise, storing the identity information of the WLAN and its corresponding network selection information.